UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0197

January 17, 2001

Mr. Barron Bail
District Manager
BLM - Prineville District
P.O. Box 550
3050 NE 3rd Street
Prineville, Oregon 97754

Re: Formal Section 7 Consultation and Essential Fish Habitat Consultation on the Effects of Livestock Grazing Allotments Administered by the Bureau of Land Management in the John Day River Basin, Oregon for 2000 and 2001.

Dear Mr. Bail:

Enclosed is a biological opinion prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) on the effects of livestock grazing allotments administered by the Bureau of Land Management in the John Day River Basin, Oregon. The NMFS concludes in this biological opinion (Opinion) that the proposed action is not likely to jeopardize the subject species or adversely modify critical habitat. As required by Section 7 of the ESA, NMFS included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are reasonable and appropriate to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on Essential Fish Habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation Management Act and implementing regulations at 50CFR Part 600.

Please direct any questions regarding this consultation to Ron Lindland of my staff in the Oregon State Branch Office at (503) 231-2315.

Sincerely,

John Volkman for

Donna Darm
Acting Regional Administrator

cc: Al Mauer, U.S. Fish and Wildlife Service
Tim Unterwegner, Oregon Department of Fish and Wildlife

Endangered Species Act - Section 7 Consultation
BIOLOGICAL OPINION

&

Magnuson - Stevens Act
Essential Fish Habitat Consultation

Livestock Grazing on Lands Administered by the
Bureau of Land Management
in the John Day River Basin, Oregon
2000 and 2001

Agency: Bureau of Land Management, Prineville District, Central Oregon Resource Area

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: January 17, 2001

Refer to: OSB2000-0197

TABLE OF CONTENTS

1. BACKGROUND

On April 24, 2000, the National Marine Fisheries Service (NMFS) received a letter from the Bureau of Land Management (BLM), Prineville District, Central Oregon Resource Area (CORA) requesting formal consultation regarding the potential effects of proposed livestock grazing activities on BLM-administered allotments in the John Day River (JDR) basin on Middle Columbia River (MCR) steelhead and their designated critical habitat. The accompanying draft biological assessment (BA) described the proposed livestock grazing actions and the environmental baseline, and addressed the effects of those actions on MCR steelhead and their designated critical habitat on BLM-administered lands in the JDR basin.

In that draft BA, the BLM determined that 138 livestock grazing allotments "may affect" MCR steelhead or their habitat and that grazing on 127 of those allotments were "may affect, but not likely to adversely affect" (NLAA) MCR steelhead or their habitat. After further discussion and exchange of information, BLM and NMFS agreed that 109 of the 138 "may affect" allotments were NLAA and 29 were "likely to adversely affect" (LAA).

On June 7, 2000, NMFS received a revised draft BA incorporating additional information and the changes in effects determinations. NMFS received the final version of the BA describing BLM grazing actions for 2000 on June 26, 2000. NMFS issued a June 28, 2000, letter concurring that livestock grazing for 2000 on 109 BLM-administered allotments is NLAA MCR steelhead or their designated critical habitat. The remaining 29 LAA allotments are addressed in this biological opinion (Opinion). Because the grazing actions on BLM-administered grazing allotments and their effects on MCR steelhead or their designated critical habitat are not expected to change between 2000 and 2001, except on the Big Baldy allotment (4052), this Opinion covers those actions through 2001. In 2001, the North Pasture on the Big Baldy allotment, located downstream from Izee Falls on the South Fork John Day River (SFJDR), will be rested which would change the effects determination for that allotment to NLAA.

The MCR steelhead (*Onchorynchus mykiss*) was listed as threatened under the Endangered Species Act (ESA) by NMFS on March 25, 1999 (64 FR 14517). Critical habitat for the MCR steelhead was designated on February 16, 2000 (65 FR 7764). All streams and their adjacent riparian areas in the JDR basin downstream from longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) are designated as critical habitat for MCR steelhead.

The objective of this Opinion is to determine whether the subject livestock grazing actions for 2000 and 2001 are likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of designated critical habitat for MCR steelhead.

2. PROPOSED ACTIONS

The BA submitted to NMFS describes ongoing and proposed activities on 138 livestock grazing allotments on BLM-administered lands in the JDR basin. The BLM determined in the BA, and NMFS

concurred, that activities on 109 of those range allotments (for the 2000 grazing season) "may affect, but are not likely to adversely affect" (NLAA) MCR steelhead. The BLM determined that twenty-nine range allotments (for the 2000 grazing season) "may affect, and are likely to adversely affect" (LAA) the MCR steelhead. Those LAA actions which are summarized in Table 1 and individually described below, are the subject of this Opinion. On those allotments described below for which actual use figures are not listed, BLM data indicates that use levels are at or well below authorized preferred use levels established in the Allotment Management Plans (AMPs) (telephone conversation with Brent Ralston, BLM Fishery Biologist, September 19, 2000).

Table 1. BLM-administered livestock grazing allotments in the John Day River Basin addressed in this Opinion. Approximate location by River Mile, acres (BLM and private), anticipated season of use, amount of use authorized, and streams providing Middle Columbia River steelhead habitat on BLM lands within each allotment.

Allotment (Allotment Number) and Names of Pastures Where MCR Steelhead Habitat May Be Affected	Approx. River Mile of Entry to JDR, NFJDR, MFJDR, or SFJDR	Acres BLM/ Private	Anticipated Period of Livestock Use for 2000 and 2001[1]	Authorized Number of Animal Unit Months (AUMs)	Associated Streams and Rivers (Miles of potential MCR steelhead spawning/rearing habitat on BLM)
Lower John Day River (LJDR)					
Sixmile (2547) Hay Creek Sixmile Creek	30	2,397/ 2,722	Rotate pasture use; spring use (2/16-5/1) one year and winter (12/1-2/15) the next; Hay Creek used in spring of 2000	245	Hay Creek (2.0), Sixmile Creek (1.0) (Both Intermittent on BLM land)
Hay Creek (2598) Irrigated Fields North Pasture	30	1,518/ 2,111	 11/15-4/1 11/15-4/1	37	 John Day River* (0.75) Hay Creek (0.25)
Pryor Farms (2607) North Pasture	30	800/ 4,480	 June-August	50	 Hay Creek (0.50)
Belshe (2509) Little Ferry	55	1,840/ 1,100	 3/1-5/1	62	JDR* (1.5), Little Ferry Canyon (1.2, intermittent)
Eakin (2541) Jackknife	61	1,760/ 0	4/1-6/30	12	Jackknife Canyon (2.0, intermittent)
Elsie Martin (2581) Unnamed	61	920/ 0	 6/4-9/14	22	Jackknife Canyon (2.0, intermittent)

Table 1 - continued

Allotment (Allotment Number) and Names of Pastures Where MCR Steelhead Habitat May Be Affected	Approx. River Mile of Entry to JDR, NFJDR, MFJDR, or SFJDR	Acres BLM/ Private	Anticipated Period of Livestock Use for 2000 and 2001[1]	Authorized Number of Animal Unit Months (AUMs)	Associated Streams and Rivers (Miles of potential MCR steelhead spawning/rearing habitat on BLM)
Pine Creek (2518) Big Gulch Zigzag Bath Canyon Cramer Canyon	85	5,418/ 10,240	3/1-5/1 Spring (dates and use vary depending on pasture rotation)	346	JDR* (2.00) Pine Hollow (0.5) Long Hollow (1.0) Pine Hollow (0.5)
C.H. Hill (2552) Bologna Creek	182	1,835/ 1,040	4/1-5/31	86	JDR* (0.5), Bologna Creek (0.25)
West Bologna (4093) Bologna Creek	182	80/ 5,000	5/1-6/30	12	West Bologna Creek (0.20)
Upper John Day River (UJDR)					
Johnson Creek (2662) Johnson Creek	186	7,698/ 11,140	6/1-7/15	436	Johnson Creek (1.3)
Squaw Creek (2558) (No Pasture Separations)	200	5,086/ 7,400	4/15-5/31	301	Squaw (1.0), Buckhorn (1.1), Franks (100 yds)
Fopiano (2559) Willow Fopiano	204	280/ 43,720	4/15-5/31	28	Willow (0.4), Fopiano (0.1)
Clark (2645) Lower Birch Rattlesnake	204	1,550/ 2,417	1.5 months between 6/1 and 9/1 4/15-5/31	152	E.Fk.Birch (0.2), W.Fk. Birch (1.8 mile in 3 segments) Rock Creek (0.4)
Creek (4163) Breakneck	207	706/ 400	4/15-5/15 or 10/15-10/30	51	Cottonwood Creek (0.7)
Cottonwood Creek (4076) Cottonwood Mascall	207	3,113/ 4,698	4/1-6/15 4/1-6/15	204	Cottonwood Creek (0.8, migratory only)
Bear Gulch (4045) Unnamed	250	74/ 112	5/1-6-15	9	Pine Creek (0.1)

Table 1 - continued

Allotment (Allotment Number) and Names of Pastures Where MCR Steelhead Habitat May Be Affected	Approx. River Mile of Entry to JDR, NFJDR, MFJDR, or SFJDR	Acres BLM/ Private	Anticipated Period of Livestock Use for 2000 and 2001[1]	Authorized Number of Animal Unit Months (AUMs)	Associated Streams and Rivers (Miles of potential MCR steelhead spawning/rearing habitat on BLM)
Pointer (4056) Unnamed	250	85/ 190	5/1-6/15	12	Little Pine (0.25)
Allotment (Allotment Number) and Names of Pastures Where MCR Steelhead Habitat May Be Affected	Approx. River Mile of Entry to JDR, NFJDR, MFJDR, or SFJDR	Acres BLM/ Private	Anticipated Period of Livestock Use for 2000 and 2001[1]	Authorized Number of Animal Unit Months (AUMs)	Associated Streams and Rivers (Miles of potential MCR steelhead spawning/rearing habitat on BLM)
Canyon Mountain (4115) Unnamed	250	50/ 15	5/1-6/15	5	Little Pine Creek (0.4)
Round Top (4071) Grub Creek	254	360/ 10,830	4/1-5/31	20	Grub Creek (0.3)
Dixie (4016) Dixie-Standard Bear	262	2,548/ 13,150	6/1-7/15 7/16-10/15	319	Dixie (2.4), Standard (1.1), W.Fk. Standard (0.9)
Kinzua (4151) Squaw Creek (3 pastures) Gilmore Creek Rudio Creek	5	9,493/ 33,018	1.5 months sometime between 6/1 and 9/1	Total average of 712 since 1989	Squaw (1.7 in 3 segments), Rudio (0.4), and Gilmore Creeks (0.6)
North Fork John Day River (NFJDR)					
Barber Pole Butte (4085) Unnamed	16	560/ 2,240	4/15-5/31	28	Cottonwood Creek (0.1)
Little Wall Creek (4108) Unnamed	23	320/ 1,000	4/1-5/31	53	Little Wall Creek (0.4), Bacon Creek (0.3)
Johnny Cake Mountain (4042) Cabin Creek	28	280/ 1,000	4/1-5/31	30	NFJDR**, Cabin Creek (0.6)
North Fork (4029) Unnamed	39	1,894/ 5,505	4/1-5/31	316	NFJDR**, Potamus (0.2) and Mallory Creeks (0.4)

Allotment (Allotment Number) and Names of Pastures Where MCR Steelhead Habitat May Be Affected	Approx. River Mile of Entry to JDR, NFJDR, MFJDR, or SFJDR	Acres BLM/ Private	Anticipated Period of Livestock Use for 2000 and 2001[1]	Authorized Number of Animal Unit Months (AUMs)	Associated Streams and Rivers (Miles of potential MCR steelhead spawning/rearing habitat on BLM)
Middle Fork John Day River (MFJDR)					
Three Mile (4046) Unnamed	3	40/ 2,214	 4/1-5/31	8	MFJDR**, Long Creek (0.2)
South Fork John Day River (SFJDR)					
Murderers Creek (4020) Manjar River Cougar Gulch	16	16,004/ 18,239	 May 1-May 20 May 1-May 20 May 1-May 20	Total of 860 among 9 pastures (6 upland)	SFJDR (2.6 in three segments)
Rockpile (4103) Flats North Corridor Dog House River Davis Creek Frazier	20	4,918/ 4,899	4/8-9/15 (rotated among 9 pastures)	Total average of 320 since 1990	SFJDR (10.8 total among 5 pastures) Frazier Creek (0.2)
Big Baldy(4052) North (below Izee Falls) South (above Izee Falls)	28	12,726/ 3,346	 4/15-5/31 (North Pasture grazed in 2000 will be rested in 2001)	600	 SFJDR (2.4), Deer Creek (2.0)

[1]Harassment of spawning adult MCR steelhead and trampling of MCR steelhead redds in streams where spawning habitat is available and which are accessible to livestock on these allotments may occur any time between March 15 and July 15.

*Mainstem John Day River serves only as migratory habitat in these reaches.

**NFJDR and MFJDR serve as winter rearing and migratory habitat in these reaches.

2.1 Allotment Descriptions

2.1.1 Lower John Day River Subbasin

2.1.1.1 *Sixmile Allotment*

The Sixmile Allotment (2547) is located in the Lower John Day River (LJDR) subbasin and contains 2,397 acres of BLM land and 2,722 acres of private land. There are no perennial streams and a total of 3.0 miles of intermittent streams (Hay and Sixmile Creeks) on or adjacent to BLM lands in this allotment. Hay Creek enters the JDR near River Mile (RM) 30. According to the BA, MCR steelhead

spawning and rearing has been documented in Hay Creek and is suspected in Sixmile Creek. Grazing on BLM lands in this allotment is authorized between December 1 and May 1 for a preferred total of 245 Animal Unit Months[2] (AUMs). There are three pasture units in this allotment; the Hay Creek and Sixmile Creek pastures contain MCR steelhead habitat. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," BLM lands in the Upper Pasture are considered as Group 4[3] "scattered tracts." The Upper Pasture does not contain MCR steelhead habitat. According to the BA, there are two vegetative trend study areas and 11 photopoints located on this allotment. The most recent photos were taken in 1995.

2.1.1.2 *Hay Creek Allotment*

The Hay Creek Allotment (2598) is located in the LJDR subbasin and contains 1,518 acres of BLM land and 2,111 acres of private land. There is a total of 1.0 mile of perennial stream (0.75 mile of JDR and 0.25 mile of Hay Creek) and no intermittent streams on or adjacent to BLM land in this allotment. Hay Creek enters the JDR near RM 30. Grazing on BLM land in this allotment is authorized during winter and early spring (November 15-April 1) for a preferred total of 37 AUMs. There are six pasture units in this allotment; only the North Pasture contains MCR steelhead spawning and rearing habitat. No monitoring information is available for this allotment.

2.1.1.3 *Pryor Farms Allotment*

The Pryor Farms Allotment (2607) is located in the LJDR subbasin and contains 800 acres of BLM land and an estimated 4,480 acres of private land. There is a total of 0.50 mile of perennial stream (Hay Creek) and no intermittent streams on or adjacent to BLM land in this allotment. Hay Creek provides spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to November 4 for a preferred total of 50 AUMs, but occurs only during the summer (June-August). There are two pasture units in this allotment; the North Pasture contains MCR steelhead spawning and rearing habitat in Hay Creek. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," the South Pasture is considered a Group 4 "scattered tract." There is one vegetative trend study plot in this allotment.

2.1.1.4 *Belshe Allotment*

The Belshe Allotment (2509) is located in the LJDR subbasin and contains 1,840 acres of BLM land and 1,100 acres of private land. There are a total of 1.5 miles of perennial stream (mainstem JDR) and 1.25 miles of intermittent stream (Little Ferry Canyon) on or adjacent to BLM land in this allotment.

---

[2]A standardized measurement of the amount of forage necessary to sustain a cow and calf for one month.

[3]Small, isolated pasture/use areas that may affect aquatic resources addressed by PACFISH/INFISH but cannot be managed effectively due to lack of access by BLM.

Little Ferry Canyon enters the JDR near RM 55. The mainstem JDR serves as a migration route for MCR steelhead, while Little Ferry Canyon provides spawning and rearing habitat. Grazing on BLM land in this allotment is authorized along the streams between March 1 and May 1 for a preferred total of 62 Animal Unit Months (AUMs). There are four pasture units on this allotment; only the Little Ferry Pasture contains MCR steelhead spawning and rearing habitat. There is one photopoint and one step point transect in this allotment.

2.1.1.5 *Eakin Allotment*

The Eakin Allotment (2541) is located in the LJDR subbasin and contains 1,760 acres of BLM land and no private land. There are no perennial streams and 2.0 miles of intermittent streams (Jackknife Canyon) on or adjacent to BLM land in this allotment. Jackknife Canyon enters the JDR at RM 61.4. MCR steelhead may spawn in the intermittent streams during abundant water years. Grazing on this allotment is authorized between April 1 and June 30 for a preferred total of 12 AUMs. There are three pasture units in this allotment; the Jackknife Pasture contains some MCR steelhead habitat in intermittent streams. Because of the limited fishery potential (intermittent streams only), there is no riparian monitoring information available on this allotment.

2.1.1.6 *Elsie Martin Allotment*

The Elsie Martin Allotment (2581) is located in the LJDR subbasin and contains 920 acres of BLM land and no private land. There are no perennial streams and 2.0 miles of intermittent streams on or adjacent to BLM land in this allotment; however, MCR steelhead are known to spawn downstream from the allotment in Jackknife Canyon. Jackknife Canyon enters the JDR at RM 61.4. Cattle grazing is authorized from May 1 to October 15 for a preferred total of 22 AUMs, but usually occurs between June 4 and September 14. There is only one pasture on this allotment. Because of the limited fishery potential (intermittent streams only), there is no riparian monitoring information available on this allotment.

2.1.1.7 *Pine Creek Allotment*

The Pine Creek Allotment (2518) is located in the LJDR subbasin and contains 5,418 acres of BLM land and an estimated 10,240 acres of private land. There are a total of 4.5 miles of perennial streams (mainstem JDR, Pine Hollow Creek, and Long Hollow Creek) and no intermittent streams on or adjacent to BLM land in this allotment. Pine Creek enters the JDR near RM 85. The mainstem JDR serves as a migration route for MCR steelhead, while Pine Creek and Long Hollow Creek provide spawning and rearing habitat. Grazing on BLM land in this allotment is authorized during early spring (March 1-May 1) and/or winter (November 15 through January) for a preferred total of 346 AUMs. There are 10 pasture units on this allotment. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," BLM lands in the Cramer Canyon Pasture and the Porter Canyon Pasture are considered as Group 4 "scattered tracts." The mainstem JDR in the Big

Gulch Pasture serves as a migration corridor for MCR steelhead. Pine Hollow provides MCR steelhead spawning and rearing habitat in the Zigzag and Cramer Canyon pastures; and Long Hollow provides steelhead habitat in the Bath Canyon pasture. According to the BA, there are six vegetative trend study plots and numerous photopoints located on this allotment.

2.1.1.8 *Charles H. Hill Allotment*

The Charles H. Hill Allotment (2554) is located in LJDR subbasin and contains 1,835 acres of BLM land and 1,040 acres of private land. There is 0.75 mile of perennial stream (mainstem JDR and Bologna Creek) and a total of 2.6 miles of intermittent streams on or adjacent to BLM lands in this allotment. Bologna Creek enters the John Day River near RM 182. The mainstem John Day is migratory habitat only, while MCR steelhead may spawn and rear in 0.25 mile of Bologna Creek. Grazing on BLM lands in this allotment is authorized between April 1 and May 31 for a preferred total of 86 AUMs. There are four pasture units on this allotment; only the Bologna Creek pasture provides MCR steelhead habitat. According to the BA, actual use on this allotment averaged 116 AUMs between 1988 and 1996; actual use has not been measured since 1996. There are three vegetative trend study plots and vegetative utilization sites located on this allotment.

2.1.1.9 *West Bologna Creek Allotment*

The West Bologna Creek Allotment (4093) is located in the LJDR subbasin and contains 80 acres of BLM land and 5,000 acres of private land. There is 0.60 mile of perennial (West Bologna Creek) and 0.40 mile of intermittent streams on or adjacent to BLM land in this allotment. Bologna Creek enters the JDR near RM 182. West Bologna Creek provides some marginal steelhead spawning and rearing habitat. Cattle grazing is authorized between May 1 and June 30 for 12 AUMs. According to the BA, actual use was 3 AUMs in 1993 and 2 AUMs in 1996. There is only one pasture on this allotment. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," the BLM land on this allotment is considered a Group 4 "scattered tract." Because of the marginal fisheries potential in Bologna Creek on this allotment, the most recent riparian survey was completed in 1981.

2.1.2 Upper John Day River Subbasin

2.1.2.1 *Johnson Creek Allotment*

The Johnson Creek Allotment (2662) is located in the Upper John Day River (UJDR) subbasin and contains 7,698 acres of BLM land and 11,140 acres of private land. There are a total of 2.0 miles of perennial stream (Johnson Creek) and 11.5 miles of intermittent streams on or adjacent to BLM land in this allotment. Johnson Creek provides a total of 1.3 miles of MCR steelhead spawning and rearing habitat in a deep, densely forested canyon. Johnson Creek enters the JDR near RM 186. Cattle grazing is authorized from April 1 to November 15 for a preferred total of 436 AUMs, but occurs from

April 15 to May 31 on the LJD River and China Hat Creek, and from June 1 to July 15 on Johnson Creek and Hide- and-Seek Creek. There are no pasture unit separations in this allotment. According to the BA, actual use on this allotment has consistently exceeded permitted use. Between 1987 and 1997, actual use has ranged between 303 AUMs and 1,040 AUMs, with an average of 674 AUMs, which considerably exceeds the authorized total.
There is one vegetative trend study plot and vegetative utilization study sites on this allotment; however, the most recent survey to evaluate riparian conditions and instream habitat was performed in 1980.

2.1.2.2 *Squaw Creek Allotment*

The Squaw Creek Allotment (2558) is located in the UJDR subbasin and contains 5,086 acres of BLM land and 7,400 acres of private land. There are a total of 2.5 miles of perennial streams (Squaw, Buckhorn, and Frank Creeks) and 6.4 miles of intermittent streams on or adjacent to BLM lands in this allotment. Squaw Creek enters the JDR near RM 200, and Buckhorn and Frank Creeks are tributaries to Squaw Creek. Squaw and Buckhorn Creeks provide spawning and rearing habitat for MCR steelhead; while Frank Creek provides about 100 yards of rearing habitat. Grazing on BLM land in this allotment is authorized during early spring (April 15-May 31) for a preferred total of 301 AUMs. There are no pasture unit separations on this allotment. According to the BA, actual use on this allotment between 1990 and 1996 ranged from 243 to 527 AUMs and averaged 327 AUMs. According to the BA, there are two vegetative trend study plots, several photopoints, and vegetative utilization study sites on this allotment.

2.1.2.3 *Fopiano Allotment*

The Fopiano Allotment (2559) is located in the UJDR subbasin and contains 280 acres of BLM land and 43,720 acres of private land. There are a total of 0.5 mile of perennial streams (Willow and Fopiano Creeks) and 0.1 mile of intermittent streams on or adjacent to BLM land in this allotment. Willow and Fopiano Creeks provide potential spawning and rearing habitat for MCR steelhead. Willow Creek is a tributary to Mountain Creek, which is tributary to Rock Creek which enters the JDR near RM 204. Grazing on BLM land in this allotment is authorized during early spring (April 15-May 31) for a preferred total of 28 AUMs. There are no pasture unit separations on this allotment. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," BLM parcels of land on this allotment are considered as Group 4 "scattered tracts." The most recent stream survey data on this allotment was collected in 1980.

2.1.2.4 *Clark Allotment*

The Clark Allotment (2645) is located in the UJDR subbasin and contains 1,550 acres of BLM land and 2,417 acres of private land. There are a total of 3.1 miles of perennial streams (Rock Creek and East and West Forks of Birch Creek) and 5.6 miles of intermittent streams on or adjacent to BLM land in this allotment. The East and West Forks of Birch Creek provide marginal spawning and rearing

habitat for MCR steelhead, while Rock Creek provides only migratory habitat. Birch Creek is a tributary to Rock Creek. Rock Creek enters the JDR near RM 204. Cattle grazing is authorized from April 15 to May 31 in the Rattlesnake Pasture and for a 1.5 month period between June 1 and September 1 in the Lower Birch Pasture for a preferred total of 152 AUMs. There are seven pasture units in this allotment; Lower Birch and Rattlesnake pastures provide MCR steelhead spawning and rearing habitat in the East and West Forks of Birch Creek and Rock Creek. According to the BA, actual use on this allotment ranged from 184 AUMs to 371 AUMs between 1988 and 1996 and averaged 268 AUMs which considerably exceeds the preferred level. There are two vegetative trend study plots, several photopoints, and vegetative utilization study sites on this allotment.

2.1.2.5 *Creek Allotment*

The Creek Allotment (4163) is located in the UJDR subbasin and contains 706 acres of BLM land 400 acres of private land. There is 0.70 mile of perennial (Cottonwood Creek) and 3.0 miles of intermittent streams on or adjacent to BLM land in this allotment. Cottonwood Creek enters the JDR near RM 207. Cottonwood Creek provides MCR steelhead spawning and rearing habitat. Cattle grazing is authorized between April 15 and May 31 or October 15-30 for a preferred total of 51 AUMs. According to the BA, actual use on this allotment has ranged between 33 and 56 AUMs from 1984 to 1996, with an average use of 41 AUMs. There are no pasture unit separations on this allotment. There is one vegetative trend study plot on this allotment.

2.1.2.6 *Cottonwood Creek Allotment*

The Cottonwood Creek Allotment (4076) is located in the UJDR subbasin and contains 3,113 acres of BLM land and 4,698 acres of private land. There are a total of 1.5 miles of perennial (Cottonwood Creek) and 8.0 miles of intermittent streams on or adjacent to BLM land in this allotment. Cottonwood Creek enters the JDR near RM 207. Cottonwood Creek provides 0.80 mile of marginal steelhead spawning and rearing habitat on BLM land. Authorized season of use was changed in 1990 to between April 1 and June 15 for a preferred total of 204 AUMs; however, the permittee has not complied with the new use dates and enforcement is difficult because most of riparian area along perennial streams is on private land. Actual use on BLM-administered lands in this allotment has been well above the use authorized by the grazing permit (204 AUMs) in each of the seven years it has been measured; ranging from 272 AUMs in 1988 to a high of 569 AUMs in 1992 and back down to 274 AUMs in 1997. There are four pasture units on this allotment; Cottonwood and Mascall pastures provide migratory habitat for MCR steelhead in Cottonwood Creek. There are two vegetative trend study plots and three riparian photopoints on this allotment. A stream channel cross section study site was established on Cottonwood Creek in 1995.

2.1.2.7 *Bear Gulch Allotment*

The Bear Gulch Allotment (4045) is located in the UJDR subbasin and contains 74 acres of BLM land

and 112 acres of private land. Pine Creek (a perennial stream) provides 0.10 mile of MCR steelhead spawning and rearing habitat on BLM land. Pine Creek enters the JDR near RM 250. There are no intermittent streams on BLM land in this allotment. Cattle grazing is authorized from May 1 to June 15 for a preferred total of 9 AUMs. There are no pasture unit separations on this allotment. All of the 74 acres of BLM land on this allotment is proposed for transfer to private ownership as part of the Northeast Oregon Assembled Land Exchange (NOALE) to be addressed under separate Section 7 consultation. There is one vegetative trend study and vegetative utilization plot on this allotment.

2.1.2.8 *Pointer Allotment*

The Pointer Allotment (4056) is located in the UJDR subbasin and contains 85 acres of BLM land and 190 acres of private land. Little Pine Creek (a perennial stream) provides 0.60 mile of MCR steelhead spawning and rearing habitat on BLM land. Little Pine Creek enters the JDR near RM 250. There are no intermittent streams on BLM land in this allotment. Cattle grazing is authorized from May 1 to June 15 for a preferred total of 12 AUMs. There are no pasture unit separations on this allotment. Other than a field assessment of general condition, no monitoring data is available on this allotment.

2.1.2.9 *Canyon Mountain Allotment*

The Canyon Mountain Allotment (4115) is located in the UJDR subbasin and contains 50 acres of BLM land 15 acres of private land. There are 0.40 mile of perennial (Little Pine Creek) and 0.20 mile of intermittent streams on or adjacent to BLM land in this allotment. Little Pine Creek enters the JDR near RM 250. Little Pine Creek provides a total of 0.40 mile of MCR steelhead spawning and rearing habitat. Cattle grazing is authorized between May 1 and June 15 for a preferred total of 5 AUMs. There are no pasture unit separations on this allotment. No monitoring data is available on this allotment.

2.1.2.10 *Round Top Allotment*

The Round Top Allotment (4071) is located in the UJDR subbasin and contains 360 acres of BLM land and 10,830 acres of private land. There are a total of 0.3 mile of perennial (Grub Creek) and 1.2 miles of intermittent streams on BLM land in this allotment. Grub Creek enters the JDR near RM 254. Grub Creek provides spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to May 31 for a preferred total of 20 AUMs. There are two pasture units on this allotment; the Grub Creek pasture contains MCR steelhead habitat. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," the BLM parcels on this allotment are considered Group 4 "scattered tracts." All of the 360 acres of BLM land on this allotment is proposed for transfer to private ownership as part of the NOALE to be addressed under separate Section 7 consultation. No monitoring information is available on this allotment.

2.1.2.11 *Dixie Allotment*

The Dixie Allotment (4016) is located in the UJDR subbasin and contains 2,548 acres of BLM land and 13,150 acres of private land. There are a total of 5.7 miles of perennial and 2.7 miles of intermittent streams on or adjacent to BLM land in this allotment. Dixie, Standard, West Fork Standard, and Comer creeks provide a total of 4.6 miles of MCR steelhead spawning and rearing habitat. Dixie Creek enters the JDR near RM 262; the other streams are tributaries to Dixie Creek. The two pastures on the allotment are grazed between June 1 and July 15 and between July 16 and October 15, with the order of grazing reversed each year. A preferred total of 319 AUMs are authorized. According to the BA, actual use on this allotment has ranged between 130 and 220 AUMs. Approximately 360 acres of BLM land on this allotment is proposed for transfer to private ownership as part of the NOALE to be addressed under separate Section 7 consultation. There are two vegetative trend study plots as well as riparian photopoints, utilization study sites, and two water temperature recorders on this allotment.

2.1.2.12 *Kinzua Allotment*

The Kinzua Allotment (4151) is located in the UJD and NFJD River watersheds and contains 9,493 acres of BLM land and 33,018 acres of private land. There are 4.8 miles of perennial and 15.4 miles of intermittent streams on or adjacent to BLM land in this allotment. Rudio Creek enters the NFJD near RM 5. Squaw, Rudio, and Gilmore Creeks provide a total of 2.7 miles of MCR steelhead spawning and rearing habitat. Grazing is authorized between June 1 and September 1 for a preferred total of 1,170 AUMs on six tracts of BLM land. According to the BA, actual use in the 1990s has ranged between 438 and 1,020 AUMs with an average use of 826 AUMs. Five pasture units on this allotment contain MCR steelhead spawning and rearing habitat (three along Squaw Creek and one each on Gilmore and Rudio Creeks). According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," the BLM parcels on this allotment are considered Group 4 "scattered tracts." Approximately 5,000 acres of BLM land on this allotment is proposed for transfer to private ownership as part of the NOALE to be addressed under separate Section 7 consultation. There are three vegetative trend and utilization study plots on this allotment.

2.1.3 North Fork John Day River subbasin

2.1.3.1 *Barber Pole Butte Allotment*

The Barber Pole Butte Allotment (4085) is located in the North Fork John Day River (NFJDR) subbasin and contains 560 acres of BLM land and 2,240 acres of private land. There are a total of 0.1 mile of perennial (Cottonwood Creek) and 1.4 miles of intermittent streams on or adjacent to BLM land in this allotment. The NFJD enters the JDR at RM 185 and Cottonwood Creek enters the NFJD near RM 16. Cottonwood Creek provides spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized for 1.5 months between November 1 to February 28 and April 15 to May 31 for a preferred total of 28 AUMs. There are no pasture unit separations on this allotment. Because of the small section of stream on BLM land in this allotment, no monitoring data is available. All of the 560

acres of BLM land on this allotment is proposed for transfer to private ownership as part of the NOALE to be addressed under separate Section 7 consultation.

2.1.3.2 *Little Wall Creek Allotment*

The Little Wall Creek Allotment (4108) is located in the NFJDR subbasin and contains 320 acres of BLM land and 1,000 acres of private land. There are a total of 0.7 mile of perennial (Little Wall, Bacon, and Three Trough Creeks) and 0.3 mile of intermittent streams on or adjacent to BLM land in this allotment. Wall Creek enters the NFJD near RM 23. The perennial streams all provide spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to May 31 for a preferred total of 53 AUMs. There are two pasture units in this allotment; the northern pasture contains MCR steelhead habitat. No monitoring data is available on this allotment.

2.1.3.3 *Johnny Cake Mountain Allotment*

The Johnny Cake Mountain Allotment (4042) is located in the NFJDR subbasin and contains 280 acres of BLM land and 1,000 acres of private land. There are a total of 1.2 miles of perennial (NFJD River and Cabin Creek) and 0.6 mile of intermittent streams on or adjacent to BLM land in this allotment. Cabin Creek enters the NFJD near RM 28. The NFJD River provides winter rearing and migratory habitat and Cabin Creek spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to May 31 for a preferred total of 30 AUMs. There are two pasture units in this allotment; the Cabin Creek pasture provides MCR steelhead spawning and rearing habitat. Several riparian photopoints have been established on this allotment since 1996.

2.1.3.4 *North Fork Allotment*

The North Fork Allotment (4029) is located in the NFJDR subbasin and contains 1,894 acres of BLM land and 5,505 acres of private land. There are a total of 5.75 miles of perennial (NFJD River, Potamus, and Mallory Creeks) and 1.6 miles of intermittent streams on or adjacent to BLM land in this allotment. The NFJD enters the JDR at RM 185. Potamus Creek enters the NFJD near RM 39. The NFJD River provides migratory and winter rearing habitat and Potamus and Mallory Creeks spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to May 31 for a preferred total of 316 AUMs. Actual use on BLM land has varied from 44 to 196 AUMs between 1988 and 1999. There are two pasture units on this allotment; both contain MCR steelhead habitat. There are riparian photopoints along the NFJDR, Mallory, and Potamus Creeks, as well as utilization study plots, and a temperature recorder in the NFJDR.

2.1.4 Middle Fork John Day River subbasin

2.1.4.1 *Three Mile Allotment*

The Three Mile Allotment (4046) is located in the Middle Fork John Day River (MFJDR) subbasin

and contains 80 acres of BLM land and 2,174 acres of private land. There are a total of 0.4 mile of perennial (MFJD River and Long Creek) and no intermittent streams on or adjacent to BLM land in this allotment. The MFJD River enters the NFJD River near RM 32 and Three Mile Creek enters the MFJD River near RM 3.5. The MFJD River provides winter rearing and migratory habitat and Long Creek spawning and rearing habitat for MCR steelhead. Cattle grazing is authorized from April 1 to May 31 for 8 AUMs. According to definitions provided in Appendix E of the "2000 Grazing Implementation Monitoring Module," the BLM land on this allotment is considered a Group 4 "scattered tract." There is a vegetative trend and utilization study plot on this allotment. All of the 40 acres of BLM land on this allotment is proposed for transfer to private ownership as part of the NOALE to be addressed under separate Section 7 consultation.

2.1.5 South Fork John Day River subbasin

2.1.5.1 *Murderers Creek Allotment*

The Murderers Creek Allotment (4020) is located in the South Fork John Day River (SFJDR) subbasin and contains 16,004 acres of BLM land and 18,239 acres of private land. There are a total of 7.6 miles of perennial (2.6 in the SFJD River, 0.5 in Murderers Creek, 0.6 in Cabin Creek, 0.6 in Flat Creek, 1.0 in Oliver Creek, 0.2 in Tunnel Creek, 0.5 in Johnson Creek, and 1.6 in Cougar Gulch) and 48 miles of intermittent streams on or adjacent to BLM land in this allotment. The SFJD River enters the JDR near RM 212 and Murderers Creek enters the SFJD near RM 16. MCR steelhead spawning and rearing habitat is available in the SFJD River and Murderers, Cabin, and Flat Creeks. Cattle grazing is authorized for three riparian pastures (Manjar, River, and Cougar Gulch) between May 1 and May 20 for two years and then rested the third year. The six upland pastures are grazed between May 1 and June 1 or between May 20 and July 1 for a preferred total of 860 AUMs. All of Murderers Creek and most of the SFJD River on BLM and ODFW lands in this allotment are exclosed from livestock use by fencing. Pastures containing MCR steelhead habitat on BLM lands are Manjar, River, and Cougar Gulch. Monitoring on this allotment includes three riparian transects along Flat Creek and one along Bridge Creek, riparian photopoints, and water temperature in the SFJDR and Murderers Creek.

2.1.5.2 *Rockpile Allotment*

The Rockpile Allotment (4103) is located in the SFJDR subbasin and contains 4,918 acres of BLM land and 4,899 acres of private land. There are 10.8 miles of perennial and 7.5 miles of intermittent streams on or adjacent to BLM land in this allotment. The SFJD enters the JDR near RM 212. Frazier Creek is a tributary to Wind Creek which enters the SFJD near RM 20. The SFJD River and Frazier Creek provide a total of 7.6 miles of MCR steelhead spawning and rearing habitat. Cattle grazing is rotated among 9 pastures between April 8 and September 15. A total of 928 AUMs are authorized for this allotment. According to the BA, actual use has ranged between 164 and 356 AUMs in the 1990's, with an average use of 286 AUMs. It was also noted in the BA that unauthorized use has been

a problem on this allotment in 1993, 1997 and 1998.
Of the nine pastures units in this allotment, those that contain MCR steelhead habitat (mostly migratory with some spawning area) are Flats, North Corridor, Dog House, River, and Davis Creek along the SFJDR and the Frazier pasture on Frazier Creek. Monitoring on this allotment includes seven vegetative trend study plots, utilization studies, eight riparian photopoints, and two water temperature recorders in the SFJDR.

2.1.5.3 *Big Baldy Allotment*

The Big Baldy Allotment (4052) is located in the SFJDR subbasin and contains 12,726 acres of BLM land and 3,346 acres of private land. There are a total of 11.8 miles of perennial (SFJD River and Deer Creek) and 19.0 miles of intermittent streams on or adjacent to BLM land in this allotment. The SFJD River enters the JDR near RM 212 and Deer Creek enters the SFJD at RM 28. The SFJD River up to Izee Falls (RM 28.7) and Deer Creek in the North Pasture provide 4.4 miles of spawning and rearing habitat for MCR steelhead. The South Pasture is located upstream from Izee Falls, a natural barrier to upstream migration of anadromous fish, on the SFJD River. Cattle grazing is authorized from April 15 to May 31 for a preferred total of 600 AUMs. There are two pastures, with the north pasture being grazed on even years (2000) and the south pasture on odd years (2001). According to the BA, actual use on this allotment has ranged from 150 to 530 AUMs between 1990 and 1999 with an average use of 375 AUMs. Monitoring on this allotment includes riparian photopoints, vegetative trend and utilization study plots, and temperature recorders in Deer and Sunflower Creeks and the SFJDR.

2.2 Allotment Monitoring

According to the BA, the BLM conducts grazing monitoring programs consisting of vegetative trend study plots and periodic compliance checks for vegetation utilization on selected allotments. Photopoints are established at one or more locations on most allotments. The Pine Creek Allotment contains six vegetative trend study plots and numerous photopoints. There are two vegetative trend study plots on the Sixmile Allotment, three on Charles H. Hill, two on Squaw Creek, one on Hay Creek, one on Pryor Farms, two on Clark, one on Johnson Creek, two on Dixie, six on Murderers Creek, one on Bear Gulch, one on Three Mile, two on Big Baldy, two on Cottonwood Creek, seven on Rockpile, three on Kinzua, and one on Creek.

In the spring of 2000, Cottonwood Creek on the Cottonwood Creek Allotment (4076) was checked for potential MCR steelhead spawning areas and redds on BLM land. No MCR steelhead redds were found and habitat was found to be marginal. There is MCR steelhead spawning habitat further upstream on the Malheur National Forest.

A March 9, 2000, USFS/BLM memorandum transmitted the "2000 Grazing Implementation Monitoring Module" to the Prineville BLM District and other BLM Districts and National Forests in

Oregon. The Central Oregon Resource Area of the Prineville BLM District conducted implementation monitoring as directed in the module on BLM allotments in the John Day River basin during 2000 and will do so again during 2001. Effectiveness monitoring, also a part of the grazing monitoring module, will begin in selected allotments in 2001.

The Central Oregon Resource Area of the Prineville BLM District is within the area covered by PACFISH[4] (USDA and USDI 1994); therefore, all agency activities are required to be consistent with their Resource Management Plan (RMP) as modified by PACFISH. All land management activities must also comply with the requirements of NMFS' June 22, 1998, biological opinion, "Section 7 Consultation on the Effects of Continued Implementation of Land and Resource Management Plans on Endangered Species Act Listed Salmon and Steelhead in the Upper Columbia and Snake River Basins" (NMFS 1998).

3. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The listing status and biological information for MCR steelhead are described in Busby et al. (1996) and NMFS (1997). The NMFS designated critical habitat for MCR steelhead on February 16, 2000 (65 FR 7764). The actions discussed in this Opinion are within the area designated as critical habitat for MCR steelhead.

According to the BA, MCR steelhead adults enter the John Day River as early as September with peak migration in October, depending on water temperature. Spawning in the John Day basin occurs from March to mid-June. The majority of spawning occurs in the tributaries, starting as low as Rock Creek which enters the John Day River near RM 22. Table 1 in the BA lists 32 tributary streams on BLM land within the UJDR subbasin (HUC 17070201) where MCR steelhead spawning and rearing is known to occur. Tables 2, 3, and 4 of the BA list 13 tributary streams on BLM land within the NFJDR subbasin (HUC 17070202), 6 in the MFJDR subbasin (17070203), and 13 in the LJDR subbasin (HUC 17070204) where MCR spawning and rearing is known to occur. Izee Falls at RM 28.5 on the SFJDR is a natural barrier to upstream migration of anadromous fish.

Fry emergence timing depends on time of spawning and water temperature during egg incubation, but usually occurs from late May through June. MCR steelhead rear in the cooler tributary streams and in the mainstem John Day River upstream from John Day, Oregon (RM 248)High summer water temperatures in the mainstem downstream from Mt. Vernon, Oregon (RM 240) preclude summer rearing by juvenile salmonids. The Oregon Department of Fish and Wildlife's (ODFW) guidelines for the timing of in-water work in the John Day River basin, which are designed to protect salmonid

[4]U.S. Department of Agriculture (USDA) and U.S. Department of Interior (USDI). 1994. Environmental Assessment for Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH). March.

species, do not allow in-water work in any stream in the basin prior to July 15 (ODFW 2000). The period during which spawning MCR steelhead adults may be susceptible to harassment or eggs and pre-emergent fry susceptible to trampling by livestock is from March 15 to July 15 in John Day River basin streams.

4. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations) NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the: 1) Definition of the biological requirements and current status of the listed species; and 2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action; 2) the environmental baseline; and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the subject actions, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the actions. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

4.1 Biological Requirements

The first step the NMFS uses when applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. The NMFS also considers

the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. MCR steelhead survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts of current or past practices. In conducting analyses of habitat-altering actions, NMFS defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and uses a "habitat approach" in its analysis (NMFS 1999). This analysis provides the necessary evaluation of essential elements of MCR steelhead critical habitat. The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

4.2 Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The "action area" for this consultation, therefore, includes the mainstem JDR, SFJD River, NFJD River, MFJD River, and all of their tributaries that flow through or beside BLM land. These streams contain spawning, rearing, or migratory habitat for MCR steelhead and are within designated critical habitat.

The current population status and trends for MCR steelhead are described in Busby et al. (1996) and in NMFS (1997). The five subbasins of the John Day River (UJD, SFJD, NFJD, MFJD, and LJD Rivers) each have MCR steelhead runs in excess of 1,000 returning adults, so the total run size for the John Day basin is probably in excess of 5,000 fish (Busby et al. 1996). NMFS (1997), citing Chilcote (1997), states that recent MCR steelhead redd counts conducted in established index areas throughout the John Day River basin suggest universal declines in redd abundance ranging from -0.9 to -5.6% over the past several years. In general, the current status of MCR steelhead populations is the result of several long-term, human-induced factors (e.g. habitat degradation, water diversions, hydropower dams) that serve to exacerbate the adverse effects of natural environmental variability from such factors

as drought, floods, and poor ocean conditions. Within the action area, habitat degradation has occurred from timber harvest, road construction, water diversions, livestock grazing, agriculture, and water pollution.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project site and watershed scales. The results of this evaluation, based on the "matrix of pathways and indicators" (MPI) described in "Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996), follow. This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species and assesses the constituent elements of critical habitat. For the purposes of this consultation, streams within the action area were grouped into nine categories. These were:
1) UJD River and tributaries (except the SFJD River); 2) SFJD River and tributaries downstream from Izee Falls; 3) SFJD River and tributaries upstream from Izee Falls; 4) NFJD River and tributaries; 5) MFJD River and tributaries; 6) LJD River (mainstem); 7) perennial tributaries to the LJD River; 8) intermittent tributaries to the LJD River; and 9) ephemeral tributaries to the LJD River. Since actual data for many of the habitat indicators in the MPI are not available for many streams, ratings are based on professional judgement of BLM fishery biologists. Izee Falls is a natural waterfalls located on the SFJD River at RM 28.7 which is a complete barrier to upstream migration by MCR steelhead. Since none of the livestock grazing allotments addressed in this Opinion are located within stream groups 3 or 9, those streams will not be discussed further.

4.2.1 Upper John Day River Subbasin

The UJD River subbasin encompasses 1.37 million acres from the headwaters of the John Day River in the Blue and Strawberry Mountains downstream to the NFJD River confluence at RM 185 near Kimberly, Oregon. Major tributaries within the subbasin include Canyon, Beech, Rock, and Johnson Creeks and the SFJD River. The BLM manages a total of approximately 145,635 acres within the UJD River subbasin (10.6 percent) including the SFJD. There are a total of 55,198 acres (4.0 percent of the UJDR subbasin) of BLM-administered lands on the 14 allotments within the UJDR subbasin which are addressed in this Opinion. For purposes of this consultation, the UJD River tributaries (excluding the SFJD River) were divided into two groups based on similarities in environmental baseline conditions; and the SFJD River was divided at Izee Falls, which is an impassable natural barrier to anadromous fish.

In the first group of UJD River tributaries including Dixie, Standard, Canyon, Indian, Beech, Little Pine creeks (refer to page B16 of the BA for a complete list), four habitat indicators (temperature, nutrients, large wood, and disturbance history) are rated as properly functioning based on thresholds established for 18 habitat indicators by NMFS' MPI. Water temperatures have been monitored in Dixie, Standard, Canyon, and Indian creeks. Another three indicators (sediment, pool quality, and refugia) are rated as properly functioning to functioning at risk. Seven indicators (physical barriers, substrate,

width/depth ratio, streambank condition, floodplain connectivity, peak/base flows, and road density) are rated as functioning at risk. Irrigation diversions on Dixie and Standard Creeks block fish passage at base flows. Pool frequency and drainage network increase indicators are rated as not properly functioning. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Dixie (4016), Bear Gulch (4045), Pointer (4056), Round Top (4071), and Canyon Mountain (4115). There are a total of 3,117 acres of BLM-administered lands on these five allotments (0.2 percent of the UJDR subbasin). The drainage network increase is mainly due to off-road vehicle use in Standard, Dixie, and Little Pine Creeks. Because of the small size and moderate to steep gradient of these streams, off-channel habitat would not be expected so this indicator was not rated. According to the BA, the BLM believes that in order to accurately rate the riparian reserve indicator as described in the MPI, an assessment of the potential of each riparian site would need to be made. Since this assessment has not been done for these streams, this indicator was not rated. However, available information regarding riparian conditions (based on standardized riparian transects established by the BLM) along streams in most allotments is provided in Appendix C of the BA and summarized below.

In the second group of UJD River tributaries including Warrens, Flat, Belshaw, Cottonwood creeks (refer to page B18 of the BA for a complete list), two of the habitat indicators (physical barriers and disturbance history) are rated as properly functioning based on thresholds established by NMFS' MPI. Another indicator (nutrients) is rated as properly functioning to functioning at risk. Seven indicators (sediment, off-channel habitat, streambank condition, floodplain connectivity, peak/base flows, drainage network increase, and road density) are rated as functioning at risk. Substrate and pool quality indicators are rated as functioning at risk to not properly functioning. Temperature, large wood, pool frequency, refugia, and width/depth ratio are rated as not properly functioning. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Johnson Creek (2662), Squaw Creek (2558), Fopiano (2559), Clark (2645), Creek (4163), and Cottonwood Creek (4076). There are a total of 18,433 acres of BLM-administered lands on these six allotments (1.3 percent of the UJDR subbasin). The riparian reserve indicator was not rated for the same reason as stated above, however, riparian condition data are included where available.

In the SFJD River and tributaries downstream from Izee Falls (refer to page B20 of the BA for a complete list), the disturbance history indicator was rated as properly functioning. Ten habitat indicators (temperature, nutrients, pool quality, off channel habitat, refugia, width/depth ratio, streambank condition, floodplain connectivity, peak/base flow, and drainage network increase) are rated as functioning at risk. The road density indicator was rated as functioning at risk to not properly functioning. Sediment, physical barriers, substrate, large wood, and pool frequency are rated as not properly functioning. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Murderers Creek (4020), Rockpile (4103), and Big Baldy (4052). There are a total of 33,648 acres of BLM-administered lands on these three allotments (2.5 percent of the UJDR subbasin). The riparian reserve indicator was not rated for the same reason as stated earlier, however, riparian condition data are included where available.

4.2.1.1 *UJD River Range Allotments*

The Johnson Creek (2662), Squaw Creek (2558), Fopiano (2559), Clark (2645), Creek (4163), Cottonwood Creek (4076), Bear Gulch (4045), Pointer (4056), Canyon Mountain (4115), Round Top (4071), and Dixie (4016) allotments are located in the UJDR subbasin. The BLM-administered portions of these 11 allotments comprise 1.5 percent of the total acreage in the UJDR subbasin. MPI habitat ratings for streams in the UJDR subbasin are discussed above. The following is a discussion of riparian and streambank conditions, where survey information is available, for allotments in the UJDR subbasin.

On the Johnson Creek Allotment (2662), riparian vegetation conditions along Johnson Creek are rated good by the BLM. Johnson Creek flows through a deep, heavily forested canyon. Spawning substrate is limited, with cobble and small boulders dominating the stream bottom. Johnson Creek is not listed on the 1998 Oregon Department of Environmental Quality (ODEQ) Clean Water Act Section 303 (d) list [303(d) list]. The China Hat Creek riparian area on the Johnson Creek allotment has been degraded by past heavy grazing, and will be excluded from grazing until recovery occurs.

On the Squaw Creek Allotment (2558), riparian conditions were rated good by the BLM along Squaw and Buckhorn Creeks with good vegetative diversity (white alder, birch, cottonwood, douglas fir, gooseberry, currant, mock orange, chokecherry, rose, and willow). Channel stability was also rated good. A steelhead redd survey conducted in 1999 found three redds on BLM land in Squaw Creek, but none in Buckhorn. The streams in this allotment are not on the 303(d) list.

On the Fopiano Allotment (2559), riparian conditions were rated fair by the BLM along Willow and Fopiano Creeks. Channel stability was rated good on both streams. Rock Creek to which Willow Creek is a tributary is on the 303(d) list for exceeding temperature standards.

On the Clark Allotment (2645), Rock Creek is rated as poor MCR steelhead habitat with a high width/depth ratio, minimal pool habitat, and high summer water temperatures. The East and West Forks of Birch Creek also lack pools, spawning gravel, and instream wood. Rock Creek is on the 303(d) list for exceeding temperature standards.

On the Creek Allotment (4163), Cottonwood Creek is rated in good condition by the BLM with a diversity of shrubs, willows, birch, alder, and black cottonwood. Streambank stability is also good. A fence along the west side of Cottonwood Creek prevents livestock from crossing the creek in this segment. Cottonwood Creek is on the 303(d) list for exceeding temperature standards.

In the Cottonwood Creek Allotment (4076), riparian vegetation conditions have been heavily impacted by decades of season-long grazing resulting in reduced vegetation cover, unstable streambanks, and increased width/depth ratio. Spawning and rearing habitat for MCR steelhead is marginal. According to the BA, the BLM changed from season-long grazing to spring grazing (4/1-6/15) in 1990; however

the permittee has not followed the new schedule. Cottonwood Creek is on the 303(d) list for exceeding temperature standards.

Riparian vegetation conditions are rated good by the BLM along Pine Creek on the Bear Gulch Allotment (4045), with good diversity of alder, pine, willow, and wild rose. Past cattle use has caused some streambank instability. Pine Creek is on the 303(d) list for not meeting biological criteria.

Riparian conditions along Little Pine Creek on the Pointer Allotment (4056) are rated good by the BLM, with streambanks being stable and well vegetated with grasses and forbs. Sedimentation from adjacent roads has impacted stream substrate. Little Pine Creek is on the 303(d) list for exceeding temperature standards.

Along Little Pine Creek on the Canyon Mountain Allotment (4115) riparian conditions are degraded by past mining activities, but have shown some improvement in recent years.

No information is available regarding riparian conditions along Grub Creek on the Round Top Allotment (4071). Grub Creek is on the 303(d) list for exceeding temperature standards.

Riparian vegetation conditions along Dixie and Standard Creeks on the Dixie Allotment (4016) are rated good by the BLM, being heavily forested with pine, willow, alder, and dogwood. Streambanks are stable and well vegetated. Low summer stream flows downstream from water diversions on private land and sediment from past mining activities reduce fish habitat quality in Dixie and Standard Creeks. No streams on this allotment are on the 303(d) list.

4.2.1.2 *SFJD River Range Allotments*

The Murderers Creek (4020), Rockpile (4103), and Big Baldy (4052) allotments are located in the SFJD River subbasin. The BLM-administered portions of these three allotments comprise 2.5 percent of the total acreage in the UJDR subbasin. MPI habitat ratings for streams in the SFJDR subbasin are discussed above. The following is a discussion of riparian and streambank conditions, where survey information if available, for allotments in the SFJDR subbasin.

In the Murderers Creek Allotment (4020), riparian vegetative condition along Murderers Creek is rated good by the BLM with diverse composition and good vegetative cover on streambanks. Riparian vegetation along the SFJDR is improving, based on photopoint data. High summer water temperatures and elevated sediment levels reduce the quality of spawning and rearing habitat in the SFJD River in this allotment. As described above, all of Murderers Creek and most of the SFJD River on BLM and ODFW lands in this allotment are exclosed by fencing. Murderers Creek is on the 303(d) list for exceeding temperature standards.

Riparian conditions are rated good by the BLM along the SFJD River on the Rockpile Allotment

(4103) which is located downstream from Izee Falls on the SFJD River. Photopoints established at four locations along the SFJD River in 1979 and retaken in 1997 and 1998 show marked improvement in streambank stability, herbaceous ground cover, and shrub canopy. Steelhead spawning and rearing potential in the SFJD River is reduced by high summer water temperatures and excessive sediment.

Riparian vegetation conditions along the SFJD River and Deer Creek in the Big Baldy Allotment (4052), are rated good to excellent overall by the BLM. Deer Creek is inaccessible to cattle in this allotment because of dense riparian vegetation. Large boulder substrate and steep gradient in Deer Creek also discourage entry by cattle. Deer Creek is on the 303(d) list for exceeding temperature standards.

4.2.2 North Fork John Day River subbasin

The NFJD River subbasin encompasses 1.18 million acres. The Prineville District of the BLM manages a total of approximately 35,350 acres (3.0 percent) from the mouth of the NFJD River to RM 51.4. Major tributaries within the subbasin include Granite, Desolation, Camas, Potamus, Big Wall, Cottonwood, and Rudio Creeks and the MFJD River. There are a total of 12,587 acres (1.1 percent of the NFJDR subbasin) of BLM-administered lands on the six allotments within the NFJDR subbasin which are addressed in this Opinion. For purposes of this consultation, the NFJDR subbasin was divided into the mainstem NFJD River, NFJD River tributaries (refer to page B27 of the BA for a complete list), and the MFJD River and tributaries (refer to page B30 of the BA for a complete list).

In the mainstem NFJD River, three habitat indicators (nutrients, physical barriers, and disturbance history) are rated as properly functioning. Seven indicators (sediment, substrate, pool quality, streambank condition, floodplain connectivity, drainage network increase, and road density) are rated at risk. Temperature, large wood, pool frequency, off-channel habitat, refugia, width/depth ratio, and peak/base flow are rated as not properly functioning. The riparian reserve indicator was not rated for the same reason as stated earlier. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Johnny Cake Mountain (4042) and North Fork (4029). There are a total of 2,174 acres of BLM-administered lands on these two allotments (0.2 percent of the NFJDR subbasin).

In the NFJD River tributaries, three habitat indicators (nutrients, physical barriers, and disturbance history) are rated as properly functioning. Eight indicators (sediment, substrate, pool quality, off-channel habitat, streambank condition, floodplain connectivity, peak/base flow, and drainage network increase) are rated at risk. Three indicators (temperature, large wood, and road density) are rated at risk/not properly functioning, and three (pool frequency, refugia, and width/depth ratio) are not properly functioning. The riparian reserve indicator was not rated for the same reason as stated above. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Barber Pole Butte (4085), Little Wall Creek (4108) and Kinzua (4151). There are a total of 10,373 acres of BLM-administered lands on these two allotments (0.9 percent of the NFJDR subbasin).

In the MFJD River and tributaries, three habitat indicators (physical barriers, peak/base flow, and disturbance history) are rated as properly functioning. Seven indicators (sediment, nutrients, substrate, pool quality, streambank condition, floodplain connectivity, and drainage network increase) are rated at risk. Large wood and road density are rated as at risk/not properly functioning. Five indicators (temperature, pool frequency, off-channel habitat, refugia, and width/depth ratio) are rated as not properly functioning. The riparian reserve indicator was not rated for the same reason as stated above. The livestock grazing allotment addressed in this Opinion to which these habitat indicator ratings apply is Three Mile (4046) which contains 40 acres of BLM-administered land.

4.2.2.1 *NFJD River Range Allotments*

The Kinzua (4151), Barber Pole Butte (4085), Little Wall Creek (4108), Johnny Cake Mountain (4042), and North Fork (4029) are located in the NFJD River subbasin. MPI habitat ratings for streams in the NFJDR subbasin are discussed above. The following is a discussion of riparian and streambank conditions, where survey information if available, for allotments in the NFJDR subbasin.

In the Kinzua Allotment (4151), a 1981 survey rated riparian conditions along Squaw Creek as fair to poor, Rudio Creek as fair, and Gilmore Creek as fair. Later BLM surveys in 1997 on Squaw Creek and 1993 on Gilmore Creek noted that riparian conditions are improving. Part of this very large allotment (9,493 acres of BLM and 33,018 acres of private lands) also lies within the UJDR subbasin. Rudio Creek is on the 303(d) list for exceeding temperature standards.

In the Barber Pole Butte Allotment (4085), riparian condition along Cottonwood Creek is rated poor by the BLM and fish habitat in the stream is marginal with a high width to depth ratio and very little instream cover. Only 300 yards of Cottonwood Creek is on BLM land in this allotment. Cottonwood Creek is on the 303(d) list for not meeting biological criteria.

No information is available on riparian condition of streams in the Little Wall Creek Allotment (4108). Past grazing practices and an adjacent road have reduced the quality of fish habitat. No streams on this allotment are on the 303(d) list.

Riparian vegetation conditions along Cabin Creek in the Johnny Cake Mountain Allotment (4042) are rated good by the BLM, with willows dominating. No streams on this allotment are on the 303(d) list.

In the North Fork Allotment (4029), according to the BLM, riparian conditions appear to be improving along Potamus and Mallory Creeks since grazing strategies were modified in 1996. Data from a photopoint established in 1995 along the NFJD and retaken each year through 1998 indicate increases in riparian herbaceous vegetation. Both Potamus and Mallory Creeks are on the 303(d) list fro exceeding temperature standards.

4.2.2.2 *MFJD River Range Allotment*

The Three Mile Allotment (4046) is located in the MFJD River subbasin. The 2,254-acre Three Mile allotment contains only 80 acres of BLM land. MPI habitat ratings for streams in the MFJDR subbasin are discussed above. No information is available regarding riparian conditions along Long Creek in the Three Mile allotment. Long Creek is on the 303(d) list for exceeding temperature standards.

4.2.3 Lower John Day River subbasin

The LJD River subbasin encompasses 2.01 million acres. The Prineville District of the BLM manages a total of approximately 242,600 acres (12.1 percent) from the mouth to the NFJD River confluence at RM 185. Major tributaries on BLM land within the subbasin include Bridge, Thirtymile, and Rock Creeks. There are a total of 16,568 acres (0.8 percent of the LJDR subbasin) of BLM-administered lands on the nine allotments within the LJDR subbasin which are addressed in this Opinion. For purposes of this consultation, the LJDR subbasin was divided into the mainstem LJD River, LJD River perennial tributaries, and LJD River intermittent tributaries.

The LJD River mainstem serves as a migration corridor for MCR steelhead. For this reason several indicators such as substrate, large wood, off channel habitat, and refugia were not rated. Six indicators (nutrients, physical barriers, pool frequency, pool quality, width/depth ratio, and drainage network increase) are rated as properly functioning. Five indicators (sediment, streambank condition, floodplain connectivity, peak/base flows, and road density) are rated as functioning at risk.

In the LJD River perennial tributaries (refer to page B36 of the BA for a complete list), three habitat indicators (nutrients, drainage network increase, and disturbance history) are rated as properly functioning. Nine indicators (physical barriers, substrate, pool quality, off-channel habitat, refugia, width/depth ratio, floodplain connectivity, peak/base flow, and road density) are rated at risk. Five indicators (temperature, sediment, large wood, pool frequency, and streambank condition) are rated as not properly functioning. The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Hay Creek (2598), Pine Creek (2518), C.H. Hill (2552), West Bologna (4093). There are a total of 8,851acres of BLM-administered lands on these four allotments (0.4 percent of the LJDR subbasin).

In the LJD River intermittent tributaries (refer to page B38 of the BA for a complete list), seven habitat indicators (sediment, nutrients, substrate, pool quality, streambank condition, drainage network increase, and disturbance history) are rated as properly functioning. Four indicators (physical barriers, floodplain connectivity, peak/base flow, and road density) are rated at risk.
Three indicators (temperature, pool frequency, and refugia) are rated as not properly functioning.
The livestock grazing allotments addressed in this Opinion to which these habitat indicator ratings apply are: Sixmile (2547), Pryor Farms (2607), Belshe (2509), Eakin (2541), and Elsie Martin (2581).
There are a total of 7,717 acres of BLM-administered lands on these five allotments (0.4 percent of the

LJDR subbasin).

4.2.3.1 *LJD River Range Allotments*

The Sixmile (2547), Hay Creek (2598), Pryor Farms (2607), Belshe (2509), Eakin (2541), Elsie Martin (2581) Pine Creek (2518), C.H. Hill (2552), and West Bologna (4093) allotments are located in the LJD subbasin. MPI habitat ratings for streams in the LJDR subbasin are discussed above. The following is a discussion of riparian and streambank conditions, where survey information if available, for allotments in the LJDR subbasin.

In the Sixmile Allotment (2547), eleven photopoint have been established along Hay Creek. In 1980, according to the BA, the riparian area along Hay Creek was in poor condition. Photos taken in 1995 revealed a noticeable increase in riparian herbaceous vegetation. Riparian area vegetation appears to be in an upward trend along both Hay and Sixmile Creeks in this allotment. Hay Creek is on the 303(d) list for exceeding temperature standards.

In the Hay Creek Allotment (2598), data from a photopoint established in 1987 and retaken twice since then (last in 1995) indicate increase in riparian herbaceous vegetation, increased vigor in alder, and recruitment of cottonwoods along Hay Creek.

No information is available regarding riparian conditions along Hay Creek on the Pryor Farms allotment.

In the Belshe Allotment (2509), data from a photopoint established along the John Day River at RM 55 in 1987 and remeasured in four different years since then reveals no obvious changes in riparian conditions. There has been no change in the extent or distribution of willow communities in the allotment since 1981.

No information is available regarding riparian conditions along the intermittent streams on the Elsie Martin allotment (2581).

In the Pine Creek Allotment (2518), the upper reaches of Pine Creek are vegetated with alder and mock-orange. The lower portion of Pine Creek has been degraded by past maintenance of the Pacific Gas and Electric (PG&E) natural gas pipeline which is buried beneath the stream channel or within the stream corridor in the lower 6 miles of Pine Hollow. Pine Creek is on the 303(d) list for not meeting biological criteria.

In the Charles H. Hill Allotment (2554), according to the BLM, low summer flows in West Bologna Creek would not support summer rearing of MCR steelhead, and spawning potential is marginal. No streams on this allotment are on the 303(d) list. A 1981 survey found riparian conditions along West Bologna Creek to be poor; more recent information is not available.

5. ANALYSIS OF EFFECTS

5.1 Effects of Proposed Actions

The effects determination on habitat parameters in the BA was made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of the action on them. The process described in NMFS (1996) was used to provide adequate information in a tabular form in the BA for NMFS to determine the effects of actions subject to consultation. The expected effects of the actions are expressed in terms of how they restore, maintain, or degrade each of 18 aquatic habitat factors in the action area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each action and watershed. The results of the completed checklist for the action provide a starting point for determining the overall effect of the action on the environmental baseline in the action area and for assessing effects on essential elements of MCR steelhead critical habitat.

Impacts of livestock grazing to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects are those which contribute to the immediate loss or harm to individual fish or embryos (e.g., directly stepping on a fish, trampling a redd that results in the actual destruction of embryos, or dislodging the embryos from the protective nest and ultimately destroying eggs). Indirect effects are those impacts which occur at a later time, causing loss of specific habitat features (e.g., undercut banks, sedimentation of spawning beds), localized reductions in habitat quality (e.g., sedimentation, loss of riparian vegetation, changes in channel stability and structure), and, ultimately, cause loss or reduction of entire populations of fish, or widespread reductions in habitat quantity and/or quality.

5.1.1 Direct Effects

Direct effects of livestock grazing may occur when livestock enter the streams occupied by MCR steelhead to loaf, drink, or cross the stream. During the early phases of their life cycle, MCR steelhead have little or no capacity for mobility, and large numbers of embryos or young are concentrated in small areas. Livestock entering fish spawning areas can trample redds and destroy or dislodge embryos and alevins. Belsky et al. (1999) provides a review of these direct influences on stream and riparian areas. Wading in streams by livestock can be assumed to induce mortality on eggs and pre-emergent fry at least equal to that demonstrated for human wading (Roberts and White 1992). In this investigation, a single wading incident upon a simulated spawning bed induced 43 percent mortality of pre-hatching embryos. In a recent (July 12, 2000) occurrence of unauthorized livestock grazing in the Sullens Allotment on the Malheur National Forest, five of five documented MCR steelhead redds in a meadow area of a Rosgens C-type stream channel in Squaw Creek (MFJDR subbasin) were trampled by cattle (U.S. Forest Service memorandum, August 17, 2000).

Avoidance of direct impacts to MCR steelhead spawning areas can be achieved by scheduling grazing in pastures where spawning habitat is present to occur after July 15 or by excluding livestock access from known spawning areas. As mentioned above, ODFW guidelines for the timing of in-water work in the John Day River basin, which are designed to protect salmonid species, do not allow in-water work in any stream in the basin prior to July 15. The period during which spawning MCR steelhead adults may be susceptible to harassment or eggs and pre-emergent fry susceptible to trampling by livestock is from March 15 to July 15 in John Day River basin streams. In some allotments or pastures, there are pre-existing natural topographic, geologic, and vegetative features or high spring water flows that naturally exclude or minimize livestock use from spawning areas. Other forms of direct take (e.g., harassment of MCR steelhead by livestock when livestock enter or are adjacent to occupied habitat, resulting in MCR steelhead behavioral modifications) are more difficult to address in the context of an economically-viable grazing program. Direct take in the form of harassment is reduced, in the long term, by rangeland management that results in better riparian and in-channel habitat conditions that creates more cover and other important habitat features conducive to MCR steelhead survival and recovery.

Cattle wading into a stream to loaf, drink, or cross the stream has the potential to frighten juvenile MCR steelhead from streamside cover. Once these juveniles are frightened from cover and swim into open water, they become more susceptible to predation from larger fish and avian predators. However, NMFS believes that the risk of mortality of juvenile salmonids due to flushing from cover by watering cattle is minimal. In addition, because of the small area of streambank actually utilized by cattle while watering in larger rivers (e.g., mainstem John Day River) and the availability of adequate instream cover in the immediate vicinity of watering areas, mortality of juvenile MCR steelhead from this activity is expected to be minimal.

5.1.2 Indirect Effects

Numerous symposia and publications have documented the detrimental effects of livestock grazing on stream and riparian habitats (Johnson et al. 1985; Menke 1977; Meehan and Platts 1978; Cope 1979; American Fisheries Society 1980; Platts 1981; Peek and Dalke 1982; Ohmart and Anderson 1982; Kauffman and Krueger 1984; Clary and Webster 1989; Gresswell et al. 1989; Kinch 1989; Chaney et al. 1990, Belsky et al. 1999). These publications describe a series of synergistic effects that can occur when cattle over-use riparian areas. Over time, woody and hydric herbaceous vegetation along a stream can be reduced or eliminated; trampling by livestock causes streambanks to collapse; without vegetation to slow water velocities, hold the soil, and retain moisture, floods cause more erosion of streambanks; the stream becomes wider and shallower and in some cases downcut; the water table drops; and hydric, deeply rooted herbaceous vegetation dies out and becomes replaced by upland species with shallower roots and less ability to bind the soil. The resulting instability in water volume, increased summer water temperature, loss of pools and habitat adjacent and connected to streambanks, and increased substrate fine sediment and cobble embeddedness adversely affect MCR steelhead and their habitat.

Indirect effects of livestock grazing on riparian and instream habitats include compacted stream substrates, collapse of undercut banks, destabilized streambanks, localized reduction or removal of herbaceous and woody vegetation along streambanks and within riparian areas, increased width/depth ratio, reduced pool frequency, incised channels, and lowered water tables (Platts 1991; Henjum et al. 1994). Belsky et al. (1999) provides a review of these indirect influences on stream and riparian areas. Riparian areas in poor condition are unable to buffer the effects of accelerated runoff. Accelerated runoff can cause unstable stream channels to downcut or erode laterally, accelerating erosion and sediment production (Chaney et al. 1990). Lateral erosion results in progressively wider and shallower stream channels that have warmer water temperatures, less structure, and are less productive, thus adversely affecting fish populations. Streambank hoof shearing, hummocking, bank sloughing and inadequate carry-over vegetation reduces bank stability and silt filtration capacity (Kinch 1989).

Based on plant phenology, the only grazing strategies generally considered to have a good chance for rehabilitating degraded streams and riparian areas are light or tightly controlled uses such as winter-only grazing or riparian pastures with short, early-spring use periods, and certain strategies incorporating a full season rest (Platts 1991). Clary and Webster (1989) consolidated a number of studies to outline measures needed for maintenance and restoration of fully functioning riparian areas. They recommend resting most poor ecological condition (percent similarity of riparian vegetation to the potential natural community/composition < 25%; or stream bank/channel condition rating of "poor") riparian areas and applying "riparian grazing management practices" such as spring-only grazing and residual vegetation requirements to riparian areas in fair (percent similarity of riparian vegetation to the potential natural community/composition 26-50% or better; and stream bank/channel condition rating of at least "fair") or better ecological condition. They stress that even ecologically conservative grazing systems will not succeed without good range management such as adequate fencing, good distribution of water and salt, and adequate riding to ensure uniform cattle distribution. Cow/calf pairs have a tendency to concentrate and loaf in riparian areas during mid to late summer.

Concentrated livestock use, as often occurs in uncontrolled season-long and certain rotational grazing systems, may cause unacceptable damage to woody plants and streambank morphology (Clary and Webster 1989). Spring and winter season use generally produce better livestock distribution between riparian and upland areas due to flooding of riparian areas (resulting in limited access for cattle), the presence of palatable forage on the uplands, and alternative water sources (Leonard et al. 1997, Ehrhart and Hanson 1997, and Kinch 1989). Myers (1989) concluded that good or excellent riparian conditions were maintained by grazing systems which lacked livestock use during the hot season, and recommended grazing not be allowed during the hot summer months more than once every four years. Similarly, Clary and Webster (1989) stated grazing should be avoided during mid and late summer and recommend early grazing, followed by complete removal of livestock. Early grazing allows significant herbaceous regrowth to occur in riparian areas, reducing most grazing damage before higher flows occur the following spring or summer, and avoids impacts to woody plant species when livestock forage preference shifts occur.

In areas under historic season-long grazing, major vegetation changes can and have taken place with changes in livestock use. Routinely grazing an area too late in the growing season can cause adverse changes in the plant community. Individual plants are eliminated by re-grazing them during the growing season and not allowing adequate recovery after grazing. Regardless of seral stage, at least six inches of residual stubble or regrowth is recommended to meet the requirements of plant vigor maintenance, bank protection, and sediment entrapment (Clary and Webster 1989). More than six inches of stubble height may be required for protection of critical fisheries or easily eroded streambanks and riparian ecosystem function (Clary and Webster 1989).

Over time, entire plant communities can change as a result of heavy grazing pressure. In mountain riparian systems of the Pacific Northwest, the replacement of native bunch grass with Kentucky bluegrass has occurred in many areas. Kentucky bluegrass has established itself as a dominant species in native bunch grass meadows as a result of overgrazing and subsequent habitat deterioration. Plants in the early seral stage community do not provide as much protection for the watershed and streambanks. Many forbs and annual plants that frequently dominate early seral plant communities do not have the strong deep root systems of the later seral perennials such as bunchgrasses, sedges, rushes, shrubs, and willows. Kauffman et. al. (1982) found that when grazing in moist meadows was halted, succession towards a more mesic/hydric plant community occurred.

According to the BA, with the implementation of the Strategy for Salmon in 1992 and PACFISH in 1994, many riparian areas in the John Day River basin have management programs in place to protect and enhance their condition. On the Prineville BLM District, which includes the John Day River basin, a concerted effort was begun in the early 1990s to rework grazing management strategies and institute science-based grazing systems in order to eliminate long-term habitat deterioration and promote riparian recovery. Season of use changes and restrictions were instituted, based on scientific knowledge which deals with the phenology of key plant species in order to determine timing of grazing and lead to development of healthy riparian areas. Science- based grazing strategies to promote riparian vegetative growth have been completed for most allotments with the John Day Basin. In general, this has meant a shift from summer long, hot season grazing to early spring grazing strategies.

5.1.3 Allotment Specific Effects

As discussed above, MCR steelhead spawn in John Day River basin streams beginning as early as March and continuing through mid-June. Fry emergence occurs from late May into mid-July, depending on time of spawning and water temperature. Therefore, if livestock access is allowed at any time between mid-March and mid-July on streams where MCR steelhead spawn, there is potential for harassment of spawning adults or trampling of redds. Trampling of redds can result in direct mortality to eggs and pre-emergent fry in stream gravels. As described above, if riparian grazing is allowed when and where local conditions can support it, the best time for grazing to occur (from a vegetation only standpoint) is probably during early spring green-up to allow for regrowth of vegetation prior to the end of the growing season.

Studies (Leonard et al. 1997, Ehrhart and Hanson 1997, and Kinch 1989) have shown that cattle are less likely to concentrate in riparian areas during spring months because of flooding and because water and herbaceous vegetation for grazing is readily available in upland areas away from streams. By June, stream flows have receded and water and forage may be less available in upland areas. All allotments covered by this Opinion, except for the Elsie Martin allotment (spawning and rearing occurs in Jackknife Canyon downstream from this allotment), contain or are adjacent to streams where MCR steelhead are known or suspected to spawn and rear. Current BLM grazing strategies allow grazing in these allotments during the time when MCR steelhead eggs or pre-emergent fry may be present in stream gravels. In 18 of the 29 allotments discussed in this Opinion, the authorized grazing season in riparian areas ends on or before May 31.

Under current BLM strategies, early season grazing ends by April 1 on the Hay Creek allotment; by May 1 on Belshie, Pine Creek, and Sixmile allotments; by May 20 on riparian pastures in the Murderers Creek allotment; and by May 31 on C.H. Hill, Squaw Creek, Fopiano, Clark, North Fork, Johnny Cake Mountain, Three Mile, Big Baldy, Round Top, Barber Pole Butte, and Little Wall Creek allotments and on two pastures of the Johnson Creek allotment. Somewhat later grazing is allowed until June 15 on Bear Gulch, Pointer, Cottonwood Creek, and Canyon Mountain allotments; until June 30 on the Eakin and West Bologna allotments; and until July 15 on two pastures of Johnson Creek allotment and Dixie allotment. Grazing is rotated among several pastures on the Rockpile (April 8-September 15) and Kinzua (1.5 month sometime between May 1 and October 31). The potential exists for cattle to disturb spawning adult MCR steelhead and trample redds in streams within any of these allotments. Similarly, all MCR streams within these allotments which are accessible to cattle may be susceptible to habitat degradation if not properly managed.

Because of warmer water temperatures and the flow regimes on some of the lower elevation streams in allotments such as Pryor Farms, Hay Creek, Belshe, and Eakin, MCR steelhead fry have probably emerged from stream gravels by June 1 or earlier. On the Rockpile allotment, high flows in the SFJD River would discourage cattle from entering that stream. On the Kinzua allotment, steep gradient and a deep canyon along Rudio Creek would limit cattle access.

Based on riparian photopoints and riparian vegetative trend data from studies conducted by the BLM, riparian vegetative conditions along streams on BLM-administered lands in the Sixmile (2547), Squaw Creek (2558), Fopiano (2559), Clark (2645), Johnson Creek (2662), Dixie (4016), Murderers Creek (4020), North Fork (4029), Johnny Cake Mountain (4042), Bear Gulch (4045), Big Baldy (4052), Pointer (4056), Rockpile (4103), Canyon Mountain (4115), and Kinzua (4151) allotments are improving and in an upward trend. Conversely, according to the BA, riparian vegetative conditions along streams on BLM-administered lands in the Cottonwood Creek (4076), Barber Pole Butte (4085), West Bologna (4093), and Creek (4163) allotments remain poor. Because changes in grazing practices on these allotments brought about by PACFISH did not occur until 1994 and because of the degraded conditions existing along streams in these allotments when changes were implemented, there has not been sufficient time for significant improvement in riparian conditions to occur.

No data are available regarding riparian vegetative conditions along streams on BLM-administered lands in the Belshe (2509), Pine Creek (2518), Eakin (2541), C.H. Hill (2554), Elsie Martin (2584), Hay Creek (2598), and Pryor Farms (2607) allotments in the LJDR subbasin. Streams on the Belshe, Eakin, and Elsie Martin allotments are intermittent and only used by MCR steelhead during high flow years. BLM parcels on the Pine Creek and Pryor Farms allotments are considered Group 4 scattered tracts. In addition, no data on riparian conditions were presented for the Three Mile (4046), Round Top (4071), or Little Wall Creek (4108) allotments which are located in the MFJDR, UJDR, and NFJDR subbasins, respectively. BLM parcels in the Three Mile and Round Top allotments are considered Group 4 scattered tracts as well.

5.2 Cumulative Effects

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" for this consultation, therefore, includes the mainstem JDR, SFJD River, NFJD River, MFJD River, and all of their tributaries within or adjacent to BLM-administered livestock grazing allotments. The BLM identified no specific private or state actions that are reasonably certain to occur in the future that would affect MCR steelhead or their habitat within the action area. The BLM manages 332,300 acres (about 7 percent) of the 5.1 million-acre JDR basin. The Forest Service manages 1.53 million acres (30 percent). Approximately 3.2 million acres (over 62 percent) within the basin are privately owned.

Significant improvement in MCR steelhead reproductive success outside of BLM-administered land is unlikely without changes in grazing, agricultural, and other practices occurring within these non-Federal lands that influence riparian areas in the JDR basin. Given that the MCR steelhead is listed as threatened and critical habitat has been designated, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result in the take of MCR steelhead. However, NMFS is not aware of any specific future actions which are reasonably certain to occur on non-Federal lands. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

6. CONCLUSION

The NMFS has determined that, when the effects of the subject actions addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, the NMFS concludes that the subject actions would not cause adverse modification or destruction of designated critical habitat for MCR steelhead. These conclusions were reached primarily because: 1) All relevant aquatic habitat indicators on BLM-administered livestock grazing allotments along the mainstem JDR, SFJDR,

NFJDR, MFJDR, and their tributaries are expected to be maintained or improved under current grazing regimes; 2) available BLM monitoring data indicate that implementation of a spring grazing season on most allotments has resulted in improvement in riparian vegetation and streambank conditions; 3) although available data shows that trampling of MCR steelhead redds does occur and that the percentage of redds trampled can be high in certain channel types (meadow area, C-type stream channels), improvements in BLM-administered livestock grazing in allotments containing or adjacent to MCR steelhead spawning areas are expected to minimize the number of redds trampled by livestock; 4) the percentage of the total land base within the John Day River basin which is comprised of BLM-administered lands on allotments addressed in this Opinion is low (0.8 percent in the LJDR subbasin, 1.1 percent in the NFJDR subbasin, and 4.0 percent in the UJDR subbasin); and, 5) because of improvements in riparian vegetation, stream shading, and streambank stability, aquatic habitat indicators such as water temperature, sediment, substrate embeddedness, width/depth ratio, and streambank condition are expected to be improved and restored over the long term on John Day River tributary streams. In reaching these conclusions, NMFS has utilized the best scientific and commercial data available as documented herein and by the BA describing the Federal actions.

7. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS believes that the following conservation recommendation regarding livestock grazing should be implemented:

1. Review range improvement budget annually and give the top priority to riparian areas along streams containing MCR steelhead habitat which would benefit from development of off-channel water sources and cattle exclusion devices.

2. Review all livestock grazing allotments for opportunities to allow for rest or additional rest of high priority pastures. Use the results of that review to reduce grazing impacts by making allotment management changes such as more efficient grazing systems, restructuring pasture boundaries, and increasing the number of pastures within an allotment.

8. REINITIATING OF CONSULTATION

Reinitiation of consultation is required if: 1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion;
2) new information or project monitoring reveals effects of the action that may affect the listed species

in a way not previously considered; or 3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR. 402.16). The BLM, Prineville District, may also be required to reinitiate consultation if the proposed actions are not consistent with conservation measures developed through the pending consultation on land and resource management plans for Federal land management units in the Mid and Upper Columbia River Basins.

9. ESSENTIAL FISH HABITAT

Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for "Essential Fish Habitat" (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH. "Essential Fish Habitat" means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" Magnuson-Stevens Act §3. The Pacific Fisheries Management Council (PFMC) has recommended an EFH designation for the Pacific salmon fishery that would include those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (*i.e.*, properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH, and it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

The consultation requirements of section 305(b) of the Magnuson-Stevens Act (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;

- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;

- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal

agency shall explain its reasons for not following the recommendations.

9.1 Identification of Essential Fish Habitat

Proposed designated salmon fishery EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by PFMC (PFMC 1999). Chief Joseph Dam, Dworshak Dam, and the Hells Canyon Complex (Hells Canyon, Oxbow, and Brownlee Dams) are among the listed man-made barriers that represent the upstream extent of the Pacific salmon fishery EFH. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). In the estuarine and marine areas, proposed designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception (PFMC 1999).

9.2 Proposed Action

The proposed action is detailed above in Part II. The proposed action is the implementation of the livestock grazing program on BLM-administered lands within the John Day River Basin for 2001. The action area for this consultation includes the mainstem JDR, SFJD River, NFJD River, MFJD River, and all of their tributaries within or adjacent to BLM-administered livestock grazing allotments. Streams within the John Day River Basin are part of the proposed designated EFH for chinook salmon (*Onchorhynchus tshawytscha*) (PFMC 1999). A description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to chinook salmon EFH from the subject action is based on this information.

The objective of this EFH consultation is to determine whether the implementation of the livestock grazing program on the CORA is likely to adversely affect EFH for chinook salmon in the John Day River Basin.

9.3 Effects of the Proposed Action

Since spring chinook salmon spawn and rear in the UJD River, NFJD River, MFJD River, SFJD River and certain tributary streams which are within or adjacent to BLM-administered livestock grazing allotments addressed in this Opinion, implementation of the livestock grazing program on the CORA may adversely affect chinook salmon EFH in the John Day River Basin.

9.4 Conclusion

The NMFS believes that implementation of the livestock grazing program on BLM-administered lands in the CORA may adversely affect proposed designated EFH for chinook salmon in the John Day

River Basin.

9.5 EFH Conservation Recommendations

NMFS recommends that the Reasonable and Prudent Measures and the Terms and Conditions which implement them that are listed below in Parts 11.3 and 11.4 be adopted. Should these EFH conservation recommendations be adopted, potential adverse impacts to EFH would be minimized.

9.6 Statutory Requirements

The Magnuson-Stevens Act and Federal regulations (50 CFR Section 600.920) to implement the EFH provisions require Federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of receipt. The final response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the response if inconsistent with the EFH Conservation Recommendations, an explanation of the reasons for not implementing them must be included.

9.7 Consultation Renewal

The BLM must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920 [k]).

10. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion in addition to the BA and additional information requested by NMFS and provided by the Prineville BLM District.

American Fisheries Society. 1980. Western Division. Position paper on management and protection of western riparian stream ecosystems. 24 p.

Belsky, J., A. Matzke, A. Matzke, and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. Oregon Natural Desert Association. Journal of Soil and Water Conservation. Vol.54. pp. 419-431.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. August. 261 p. (Available @ www.nwr.noaa.gov, under Protected Resources Division, Status Reviews).

Chaney, E., W. Elmore, and W. S. Platts. 1990. Livestock grazing on western riparian areas. Report prepared for U.S. Environmental Protection Agency by Northwest Resource Information Center, Inc., Eagle, Idaho. 45 p.

Chilcote, M.W. 1997. Conservation status of steelhead in Oregon. Draft report, dated September 9, 1997, Oregon Department of Fish and Wildlife, Portland, Oregon. 109 p.

Clary, W. P. and B. F. Webster. 1989. Managing grazing of riparian areas in the Intermountain Region. General Technical Report INT-263, U.S. Dept. of Agriculture, USFS, Intermountain Research Station, Ogden, Utah. 11 p.

Cope, O. B. (ed.). 1979. Proceedings of the forum - grazing and riparian/stream ecosystems. Trout Unlimited. 94 p.

Ehrhart, R.C. and P.L. Hansen. 1997. Effective cattle management in riparian zones: a field survey and literature review. USDI, Bureau of Land Management, Montana State Office. November. 92 p.

Gresswell, R. E., B. A. Barton, and J. L. Kershner (eds.). 1989. Practical approaches to riparian resource management: an educational workshop. May 8 -11, 1989, Billings, Montana. USDI Bureau of Land Management: BLM-MT-PT-89-001-4351. 193 p.

Johnson, R. R., C. D. Ziebell, D. R. Patton, P. F. Folliet, and R. H. Hamre (Tech. Coordinators). 1985. Riparian ecosystem and their management: reconciling conflicting uses; first North America riparian conference; April 16-18. Tucson, Arizona. USDA Forest Service Gen. Tech. Rpt. Rm-120. 523 p.

Kauffman, J. B. and W. C. Krueger. 1984. Livestock impacts on riparian ecosystems and streamside management implications - a review. Journal of Range Management 37(5):430 -438.

Kinch, G. 1989. Riparian area management: grazing management in riparian areas. U.S. Bureau of Land Management, Denver, Colorado. Tech. Ref. 737-4. 44 p.

Leonard, S., G. Kinch, V. Elsbernd, M. Borman, and S. Swanson. 1997. Riparian area management. TR 1737-14. Grazing management for riparian-wetland areas. USDI-Bureau of Land Management and USDA-Forest Service. 63 p.

Meehan, W. R. and W. S. Platts. 1978. Livestock grazing and the aquatic environment. Journal of Soil and Water Conservation November - December 1978:274-278.

Menke. J. (ed.). 1977. Symposium on livestock interactions with wildlife, fish and the environment. Sparks, Nevada. USDA Forest Service Pacific Southwest Forest and Range Experiment Station. Berkeley, California.

Myers, L. 1989. Grazing and riparian management in southwestern Montana. Proceedings, Practical Approaches to Riparian Resource Management an Educational Workshop. Billings, Montana.

National Marine Fisheries Service (NMFS). 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon. 28 p. (Available @ www.nwr.noaa.gov, under Habitat Conservation Division, Habitat Guidance Documents).

National Marine Fisheries Service (NMFS). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December. 62 p. (Available @ www.nwr.noaa.gov, under Protected Resources Division, Status Reviews).

National Marine Fisheries Service (NMFS). 1999. Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington and Oregon. Federal Register. Vol. 64, No. 57, pages 14517-14528. Final Rule.

March 25. (Available @ www.nwr.noaa.gov, under ESA Information, Federal Register Notices).

National Marine Fisheries Service (NMFS). 1999. Endangered and Threatened Wildlife and Plants; Definition of "Harm." Federal Register. Vol. 64, No. 215, pages 60727-60731. Final Rule. November 8. (Available @ www.nwr.noaa.gov, under ESA Information, Federal Register Notices).

National Marine Fisheries Service (NMFS). 1999. The Habitat Approach: Implementation of Section 7 of the Endangered Species Act fo Actions Affecting the Habitat of Pacific Anadromous Salmonids. Guidance memorandum from Assistant Regional Administrators for Habitat Conservation and Protected Resources to staff. 13 pages. August. NMFS, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232-2737. (Available @ www.nwr.noaa.gov, under Habitat Conservation Division, Habitat Guidance Documents).

National Marine Fisheries Service (NMFS). 2000. Designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California. Federal Register. Vol. 65, No. 32, pages 7764-7787. Final Rule. February 16. (Available @ www.nwr.noaa.gov, under ESA Information, Federal Register Notices).

Ohmart, R. D. and B. W. Anderson. 1982. North American desert riparian ecosystems. P. 433-466. *In*: G. L. Bender, ed., Reference Handbook on the Deserts of North America. Greenwood Press, Westport, Connecticut.

Oregon Department of Fish and Wildlife (ODFW). 2000. Updated Inwater Timing Guidelines. Memorandum. June 12. 15 pages.

Peek, J. M. and P. D. Dalke. 1982. Wildlife - livestock relationships symposium; Proceedings 10. (ed). April 20-22, 1982, Coeur d'Alene, Idaho. Univ. of Idaho Forest, Wildlife, and Range Experiment Station. Moscow, Idaho.

Pacific Fishery Management Council (PFMC). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon. Available @ www.pcouncil.org under Salmon, Appendix A)

Platts, W. S. 1981. Influence of forest and rangeland management on anadromous fish habitat in western North America -effects of livestock grazing. USDA Forest Service Gen. tech. Report PNW-124. 25 p.

Platts, W. S. 1991. Livestock grazing. pp. 389-424 in Meehan, ed., Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Soc., Bethesda, Maryland. 751 p.

Roberts, B.C., and R.G. White. 1992. Effects of angler wading on survival of trout eggs and pre-emergent fry. North American Journal of Fisheries Management. 12:450-459.

U.S. Department of Agriculture (USDA) and U.S. Department of Interior (USDI). 1994. Environmental Assessment for the Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH). March.

U.S. Forest Service. 2000. Report to NMFS on Sullens Allotment. Malheur National Forest. Prairie City Ranger District. Memorandum. August 17.

11. INCIDENTAL TAKE STATEMENT

Section 4 (d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (64 FR 60727; November 8, 1999). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited

taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

11.1 Amount or Extent of Take

The NMFS anticipates that the subject grazing actions covered by this Opinion have more than a negligible likelihood of resulting in incidental take of MCR steelhead. Some level of incidental take is expected to result from livestock grazing due to the potential for cattle to actually trample MCR steelhead redds, disturbance of spawning adult steelhead, or frightening of juvenile MCR steelhead from cover by livestock wading in streams. Current grazing systems (eg. Elsie Martin and Pryor Farms allotments) which allow summer-long (June-September) grazing may also result in impacts to riparian vegetation, streambank stability, and sedimentation. Because of the inherent biological characteristics of aquatic species such as MCR steelhead, however, the likelihood of discovering direct take attributable to these actions is very small. Effects of actions such as those addressed in this Opinion are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, although NMFS expects some incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage.

11.2 Effect of the Take

In this Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat for MCR steelhead when the reasonable and prudent measures are implemented.

11.3 Reasonable and Prudent Measures

The NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by the Opinion. The BLM shall:

1. Minimize the likelihood of incidental take resulting from livestock grazing and associated activities by managing livestock grazing allotments such that direct effects of livestock on spawning adult MCR steelhead, steelhead eggs, and pre-emergent fry in streams on or adjacent to those allotments are avoided or minimized.

2. Minimize the likelihood of incidental take resulting from livestock grazing and associated activities by managing livestock grazing allotments such that direct and indirect effects of

livestock on key components of MCR steelhead designated critical habitat are avoided or minimized.

11.4 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1, above, the BLM shall:

    a. Identify which specific stream reaches within or adjacent to the BLM portions of range allotments covered by this Opinion currently provide suitable spawning habitat for MCR steelhead.

    b. Determine timeframes (from BLM data files, ODFW, or other sources) during which MCR steelhead could be expected to utilize those stream reaches for spawning and during which eggs and pre-emergent fry would be expected to be present in the stream gravels.

    c. Prioritize the sensitivity of those stream reaches to grazing impacts based on Rosgen's stream channel types and the quantity, quality, and concentration of MCR steelhead spawning habitat within each stream reach.

    d. Provide this prioritized list of stream reaches covering at least 40% of the affected streams to the Level I Interagency Streamlining Consultation Team (on which NMFS is represented) at least 60 days prior to the 2002 turnout date for allotments covered by this Opinion, with the remainder being provided 60 days prior to 2003 turnout.

    e. Based on this prioritized list, the Level I Team for the Prineville BLM Central Oregon Resource Area shall determine on which of those stream reaches it is necessary to eliminate access by livestock, during those times when eggs or pre-emergent fry would be expected to be present in the gravel. Access would be eliminated by installing and maintaining temporary electric fencing during the grazing season, permanent fencing, redesigning pasture layout, or changing grazing rotations along those key stream reaches which currently provide the important MCR steelhead spawning habitat; and,

f. When unauthorized livestock use[5] or excess[6] by permitted livestock occurs within stream reaches identified as MCR steelhead spawning habitat prior to July 15, the permittee will be notified to remove the livestock immediately. BLM shall also notify NMFS 24 hours. Livestock shall be removed within two days of notification. If take has occurred, NMFS Law Enforcement shall also be notified by BLM within 24 hours of discovery.

2. To implement reasonable and prudent measure #2, above, the BLM shall:

a. Comply with all reasonable and prudent measures, terms and conditions, provided with NMFS' June 22, 1998 biological opinion, "Section 7 consultation on the Effects of Continued Implementation of Land and Resource Management Plans on Endangered Species Act Listed Salmon and Steelhead in the Upper Columbia and Snake River Basins" (NMFS 1998).

b. Consistently implement grazing-related standards and guidelines listed in PACFISH to achieve Riparian Management Objectives regarding bank stability, water temperature, large woody material, lower bank angle, and width/depth ratio; as well as other aquatic habitat parameters which may be effected by livestock grazing.

c. Meet all requirements of and fully implement the 2000 Grazing Implementation Monitoring Module.

d. Meet implementation and effectiveness monitoring requirements developed by the Level I Team for specific pasture units.

e. Based on information in the BA, for those allotments on which such information was available, actual use has consistently exceeded authorized use on the C.H. Hill (2552), Squaw Creek (2558), Johnson Creek (2662), and Cottonwood Creek (4076) allotments. The BLM shall assess how these violations of the Allotment Management Plans affect MCR steelhead or their designated critical habitat. Report to NMFS by December, 2001, what actions are taken to address these violations. If violations continue and degradation of habitat results, withdraw the grazing permit.

f. Update information on riparian vegetative conditions along streams in the Squaw Creek (2558), Clark (2645), Johnson Creek (2662), Dixie (4016), Murderers Creek (4020), and Rockpile (4103) allotments, and submit updated information to NMFS by

[5]Unauthorized use is any incident whereby livestock owned by a non-premittee enter onto the Federal lands.

[6]Excess use is any incident whereby livestock owned by a permittee holding a grazing permit are found in areas or at times other than shown on the grazing permit or otherwise authoried under a bill for collection.

December, 2001.

g. Establish photopoints and riparian vegetation trend areas along steams in the Little Wall Creek (4108) and Pryor Farms (2607) allotments to determine existing riparian conditions. According to the BA, no information is currently available.

h. Address sedimentation and erosion problems where they occur on BLM-administered lands along Little Pine Creek on the Pointer (4056) and Canyon Mountain (4115). allotments.

i. Provide an end-of-year report on grazing in allotments which contain MCR steelhead designated critical habitat or which may affect designated critical habitat downstream to NMFS by December 31 of each year. The report shall include the following:

i. Overview of the proposed action and actual management (livestock numbers, on-off dates for each pasture, grazing strategy, etc.).
ii. specific BLM implementation and effectiveness monitoring data, date, and location collected (stubble height, use of woody vegetation, bank damage, unauthorized or other illegal grazing, fence construction and maintenance).
iii. specific permittee monitoring data.
iv. review of management and compliance successes and failures.
v. new habitat trend or steelhead population data to include updated spawning surveys.
vi. compliance with each pertinent Term and Condition listed above.
vii. management changes made for current year and recommendations for future years. Please Send the completed report to:

National Marine Fisheries Service
Habitat Conservation Division, Oregon State Branch
Attn: Ron Lindland
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778